CLAIMS

1. Method of sending a digital signal, including steps according to which:

- a watermarking operation is performed, consisting of inserting a watermark, which is known to a receiving end, in the digital signal, so as to obtain a watermarked digital signal;
- an encoding operation is performed, consisting of encoding the watermarked digital signal by means of an encoder, so as to obtain an encoded watermarked signal which can be decoded by means of a parametrisable iterative decoder; and
- a sending operation is performed, consisting of sending said encoded watermarked signal, whereby in the receiving end, at least one parameter of the decoder can be modified according to the result of the comparison between a watermark obtained from the encoded watermarked signal and the known watermark.

2. Sending method according to Claim 1, wherein the encoder is a turbo-encoder.

3. Sending method according to Claim 1, wherein a modulation operation is also performed, consisting of modulating the encoded watermarked signal before the sending operation.

4. Sending method according to Claim 3, wherein the modulation operation consists of modulating the encoded watermarked signal by means of a modulation of the QPSK type.

5. Sending method according to Claim 3, wherein the modulation operation consists of modulating the encoded watermarked signal by means of a modulation of the OFDM type.

6. Sending method according to Claim 1, wherein the watermarking operation uses a technique of the fragile or semi-fragile type.

7. Sending method according to Claim 1, wherein said digital signal is an image signal.

8. Device for sending a digital signal, having:

- watermarking means, for inserting a watermark, which is known to a receiving end, in the digital signal, said watermarking means outputting a watermarked digital signal;

- encoding means, for encoding the watermarked digital signal by means of an encoder, said encoding means outputting an encoded watermarked signal which can be decoded by means of a parameterisable iterative decoder; and

- sending means, for sending said encoded watermarked signal, whereby in the receiving end, at least one parameter of the decoder can be modified according to the result of the comparison between a watermark obtained from the encoded watermarked signal and the known watermark.

9. Sending device according to the preceding claim, wherein the encoder is a turbo-encoder.

10. Sending device according to Claim 8, wherein also having modulation means for modulating the encoded watermarked signal.

11. Sending device according to Claim 10, wherein the modulation means modulate the encoded watermarked signal by means of a modulation of the QPSK type.

12. Sending device according to Claim 10, wherein the modulation means modulate the encoded watermarked signal by means of a modulation of the OFDM type.

13. Sending device according to Claim 8, wherein the watermarking means use a technique of the fragile or semi-fragile type.

14. Sending device according to Claim 8, wherein said digital signal is an image signal.

15. Method of decoding a received digital signal, said digital signal having been watermarked with a known watermark, including steps according to which:

- a decoding operation is performed, consisting of decoding at least part of the digital signal by means of a parameterisable iterative decoder;

- a watermark extraction operation is performed, consisting of extracting the watermark from the decoded signal;

- a comparison operation is performed, consisting of comparing the extracted watermark with the known watermark; and

- a modification operation is performed, consisting of modifying if necessary at least one parameter of the decoding according to the result of the comparison.

16. Decoding method according to Claim 15, wherein the modification operation includes:

- an operation of calculating the number of iterations to be applied to the decoding, consisting of determining a number of iterations to be applied as a parameter of the decoding, according to the result of the comparison; and

- an operation of adjustment of the decoding, consisting of applying during decoding the number of iterations previously determined.

17. Decoding method according to Claim 15, wherein the decoding operation is a partial decoding operation, consisting of decoding the data by means of an iterative decoder, applying an iteration or a half-iteration, so as to obtain a partially decoded watermarked digital signal, and wherein the modification operation includes:

- a quality testing operation, consisting of testing whether the quality of the extracted watermark is satisfactory; and

- as long as the quality is not satisfactory, an additional iteration or half-iteration in the decoding, so as to finally obtain the optimum number of iterations or half-iterations to be applied as a parameter of the decoding.

18. Decoding method according to Claim 15, wherein the iterative decoder is a turbodecoder.

19. Decoding method according to Claim 15, wherein the digital signal is an image signal.

20. Method of receiving a digital signal, including steps according to which:

- a receiving operation is performed, consisting of receiving modulated symbols;

- a demodulation operation is performed, consisting of demodulating the received modulated symbols, so as to obtain demodulated data; and

- a decoding operation is performed, consisting of decoding the demodulated data using a decoding method according to Claim 15.

21. Receiving method according to Claim 20, wherein the demodulation operation consists of applying a demodulation corresponding to a modulation of the QPSK type.

22. Receiving method according to Claim 20, wherein the demodulation operation consists of applying a demodulation corresponding to a modulation of the OFDM type.

23. Device for decoding a received digital signal, said digital signal having been watermarked with a known watermark, having:

- decoding means, for decoding at least part of the digital signal by means of a parameterisable iterative decoder;

- watermark extraction means, for extracting the watermark from the decoded signal;

- comparison means, for comparing the extracted watermark with the known watermark; and

- modification means, for modifying if necessary at least one parameter of the decoding according to the result of the comparison.

24. Decoding device according to Claim 23, wherein the modification means include:

- means of calculating the number of iterations, in order to determine a number of iterations to be applied as a parameter of the decoding, according to the result of the comparison; and

- means of adjusting the decoding, in order to apply, during the decoding, the number of iterations previously determined.

25. Decoding device according to Claim 23, wherein the decoding means are partial decoding means, for decoding the data by means of an iterative decoder, by applying an iteration or a half-iteration, the partial decoding means outputting a partially decoded watermarked digital signal; and wherein the modification means include:

- quality testing means, for testing whether the quality of the extracted watermark is satisfactory;

said partial decoding means effecting, as long as the quality is not satisfactory, an additional iteration or half-iteration in the decoding, so as to supply in the end the optimum number of iterations or half-iterations to be applied as a parameter of the decoding.

26. Decoding device according to Claim 23, wherein the iterative decoder is a turbodecoder.

27. Decoding device according to Claim 23, wherein the digital signal is an image signal.

28. Device for receiving a digital signal, having:

- receiving means, for receiving modulated symbols;

- demodulation means, for demodulating the modulated symbols received, the demodulation means outputting demodulated data; and

- decoding means, for decoding the demodulated data by means of a decoding device according to Claim 23.

29. Receiving device according to Claim 28, wherein the demodulation means apply a demodulation corresponding to a modulation of the QPSK type.

30. Receiving device according to Claim 28, wherein the demodulation means apply a demodulation corresponding to a modulation of the OFDM type.

31. Digital signal processing apparatus, having means adapted to implement a sending method according to Claim 1.

32. Digital signal processing apparatus, having means adapted to implement a decoding method according to Claim 15.

33. Digital signal processing apparatus, having a sending device according to Claim 8.

34. Digital signal processing apparatus, having a decoding device according to Claim 23.

35. Telecommunications network, having means adapted to implement a sending method according to Claim 1.

36. Telecommunications network, having means adapted to implement a receiving method according to Claim 20.

37. Telecommunications network, having a sending device according to Claim 8.

38. Telecommunications network, having an information receiving device according to Claim 28.

39. Mobile station in a telecommunications network, having means adapted to implement a sending method according to Claim 1.

40. Mobile station in a telecommunications network, having means adapted to implement a receiving method according to Claim 20.

41. Mobile station in a telecommunications network, having a sending device according to Claim 8.

42. Mobile station in a telecommunications network, having a receiving device according to Claim 28.

43. Base station in a telecommunications network, having means adapted to implement a sending method according to Claim 1.

44. Base station in a telecommunications network, having means adapted to implement a receiving method according to Claim 20.

45. Base station in a telecommunications network, having a sending device according to Claim 8.

46. Base station in a telecommunications network, having a receiving device according to Claim 28.

47. An information storage medium which can be read by a computer or a microprocessor storing instructions of a computer program, making it possible to implement a sending method according to Claim 1.

48. An information storage medium according to Claim 47, wherein it is removable, partially or totally.

49. An information storage medium which can be read by a computer or a microprocessor storing instructions of a computer program, making it possible to implement a decoding method according to Claim 15.

50. An information storage medium according to Claim 49, wherein it is removable, partially or totally.

51. A computer program product containing sequences of instructions for implementing a sending method according to Claim 1.

52. A computer program product containing sequences of instructions for implementing a decoding method according to Claim 15.